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## **Zia Agricultural Consulting v. Tyson Foods, Inc. and Tyson Fresh Meats, Inc.**

### **The Beef Cattle Supply Chain**

The cattle and beef market is made up of various stages. Each stage adds value to the production system in different ways.

The first stage in production is colloquially known as the cow-calf sector. The cow-calf sector is the origin point of calves destined for packer/processors. The cow-calf sector is geographically distributed across the whole of the United States with production systems varying regionally. The fundamental model of the cow-calf sector is year-round cow ownership on some type of forage with the goal of each cow generating revenue through the birth of a live calf annually. Calves leaving the cow-calf sector may be referred to among other names as weanlings, yearlings, heifers, steers, bull calves, or feeder cattle.

Calves leave the cow-calf sector at weights ranging from as little as 250 pounds all the way to 750 pounds, depending on an individual producer/rancher's business model. Calves that leave the cow-calf sector at lighter weights are likely to spend time on a stocker operation. Stocker operations also cover most of the United States, however there are concentrated areas in the southern plains, the upper Midwest, and the southeast. The fundamental model of the stocker sector is to buy calves at the lowest price possible (from one or many cow-calf operations), to add weight to those calves through grazing forages and at times grains, and to generate revenue by selling the calves once they've gained weight. The stocker sector is the most variable and flexible stage of the cattle and beef supply chain; it is designed to aggregate cattle and to decrease the production risk of those cattle by identifying and fixing problems in a set of calves. Calves leaving the stocker sector may be referred to with similar nomenclature as calves leaving the cow-calf sector, but in aggregate they are usually referred to as feeder cattle.

Calves leaving the cow-calf sector at heavier weights and calves leaving the stocker sector are typically destined for a feedlot, the final stage in live cattle production. Feedlots are largely concentrated in the Great Plains with the "Five-Area" region considered Texas-Oklahoma-New Mexico, Kansas, Colorado, Nebraska, and Iowa-Minnesota. The fundamental model of the feedlot sector is to buy calves at the lowest price possible from a variety of sources, to add weight to those calves through a primarily grain-based diet, and to generate revenue by selling the calves once they've achieved a desired weight. Calves leaving the feedlot sector are typically referred to as live cattle, fed cattle, fattened cattle, or fats, the idea being that they have concluded their 'feeder' stage and are now 'fed'.

From the feedlot sector fat calves are destined for the packing sector, the first stage in the beef portion of the cattle and beef supply chain. The packing sector also spans the United States, but most of the packing sector is concentrated in the Great Plains, close to feedlots. The fundamental model of the packing sector is to buy fed cattle from a variety of sources, to harvest those cattle at the lowest cost possible, and to generate revenue by selling the beef or beef products from those animals. The packing

sector harvests live animals and creates beef products. Harvest and final product creation may occur in the same packing plant, but in other cases harvest and the creation of final products may happen in multiple plants. Whether final product creation occurs with 'further processors' taking in standardized boxed beef package or at the original packing plant, final products generated from cattle are further processed it into frozen foods, grocery store specific orders, specific steak cuts for restaurants, jerky, and millions of other products.

The complexity of this market is only increased by the fact that one person may own a calf through one stage, a few stages, or all stages of production. Ownership may change hands at different times depending on the arrangement between buyer and seller. The number of times ownership of a calf changes is unlimited. There are also different production strategies at each stage of the process, with participants focusing on cost-minimization and profit-maximization using different tools at their disposal.

### **How Fed Cattle Are Marketed**

Fed cattle in the United States are primarily marketed (bought and sold) through two types of arrangements; through negotiated trade and through alternative marketing arrangements (AMAs), which are also known as formula trades. According to the United State Department of Agriculture's (USDA) Agricultural Marketing Service (AMS) negotiated trades are "Trades made in which the selling price is arbitrated between the buyer and seller and not through an as yet to be reported price for a particular commodity." AMAs or formula trades are defined by the same entity as, "Trading in which the price of a product is set through an agreed upon formula using the reported price of an item as a starting point."

Since 2010, 87% of fed cattle are sold using AMAs on a given week in the Texas-Oklahoma-New Mexico region. AMAs typically have some base price determined prior to sale. The base price may be the result of a single data source or combination of data series. Common data used to establish a base price include, but are not limited to, the fed cattle futures price on a previously established day, the boxed-beef cutout value on a previously established day, or the local cash price in a given region on a previously established day. The base price may or may not be known on the day the deal is reached.

The base price does not account for the application of any premiums or discounts. Premiums or discounts may be applied to a lot of cattle for quality of carcass (prime, choice, select, standard), weights above or below a given range, qualification for programs like Certified Angus Beef (CAB) or Global Animal Partnership (GAP), or production attributes like cattle produced under the Non-Hormone Treated Cattle (NHTC) designation and dehorned cattle. These premiums and discounts are added to the base price either on a per pound basis or a per head basis. Application of premiums and discounts may occur before or after harvest.

Both negotiated transactions and transactions using AMAs typically occur between a cattle feeder and the terminal packing plant. The cattle leaving the feedlot might be owned by the cattle feeder or they may be owned by another entity that paid the feedlot to 'custom feed' their cattle. These other owners might be the original cow-calf producer who subsequently retained ownership of the cattle, a party with a one-time investment in cattle for financial gain, or a cattle dealer/aggregator that regularly sources cattle and pays to have them custom fed. These parties that pay feedlots to custom feed cattle are typically charged some combination of feed costs, medicine costs, and yardage fees which amount to a margin for the feeder.

### **Tyson's Standard Pricing Model**

The typical arrangement between Tyson and its suppliers falls into the category of AMAs.

For their base price at a given location, Tyson utilizes a regional weighted average price from the week prior to harvest, quoted in dollars per hundredweight. This price is applied to the final carcass, or 'hanging', weight. For example, if a live animal entering the harvest facility is 1,300 lbs. and, once processed, the carcass with unwanted trim, offal, and hide removed weighs 832 lbs., the price per hundredweight would apply to the 832 lb. measure. This is a common data source used to establish base price in the industry. To maintain a steady flow of cattle through harvest plants it is common for Tyson and other large processors to 'book' cattle months in advance, i.e., schedule delivery and harvest of lots though ownership does not change hands until live cattle are delivered and unloaded at a packing plant. These early bookings mean that the base price at time of harvest is not known to the cattle buyer or supplier at the time of booking.

Tyson regularly applies premiums and discounts to lots of cattle ahead of delivery and harvest, particularly for cattle booked well in advance. These premiums are set on a per-head basis with the intent to compensate those feeding cattle for the 'average' attributes of the lot as assessed by cattle buyers working for Tyson. For example, a premium over and above the base price of \$300 dollars per head may be applied to each animal in a lot to account for some portion of expected ration cost, average quality of animals in the lot, special program qualification, administrative cost, and volume discounts.

The final formula for pricing, then, is:

$$\text{Price} = \text{Base Price (\$/cwt)} + \text{Premium or Discount Adjustment (\$/head)}$$

Though early commitment of cattle with an associated price is intended to decrease volatility and minimize some elements of risk, some pricing risk remains between booking and delivery. Though cattle are scheduled for delivery the price at time of harvest is unknown, the final cost to feed the cattle is unknown, and the final premiums and discounts on the spot market at the time of delivery and harvest is unknown. It is possible for either party to lose money on this transaction with the risk distributed between both. If the demand for premium attributes like CAB or NHTC increases while the cattle are on feed it is possible that the pre-established premium undercompensates the seller of cattle. Conversely, the buyer of those cattle would receive a higher-than-expected market price for premium attribute beef, increasing their margin. The inverse would be true if the demand for premium attributes falls while the cattle are on feed. In that situation it is possible that the pre-established premium overcompensates the seller of cattle, while the buyer of those cattle receives a lower-than-expected market price for premium attribute beef, decreasing their margin. In this transaction the risk of changes in premiums is borne collectively by both parties.

Under these standard practices established by Tyson with their partners, the price of the GAP and Certified Natural cattle in question were established as follows. The base price of these cattle was set using the weighted average price of the Nebraska live price from the week prior (\$183.07/cwt), as delivery occurred at the Lexington, Nebraska plant. Premiums for GAP qualified animals and Certified Natural animals, which accounted for some portion of expected ration cost, average quality of animals in the lot, special program qualification, administrative cost, and volume discounts were \$275/head and \$250/head, respectively.

$$\text{GAP Cattle} = \$183.07/\text{cwt} + \$275/\text{head}$$

$$\text{Certified Natural Cattle} = \$183.07/\text{cwt} + \$250/\text{head}$$

### Issue with Cost Plus

As stated in the previous section, the standard pricing model utilized by Tyson distributes price risk that occurs between booking and delivery across parties. The model is a common pricing model between cattle feeders and packers in the industry. The model incentivizes the buyer (the packer) to tailor premiums such that they fairly compensate the seller (the feeder or party paying to feed the cattle in a feedlot). Fair compensation through an agreed upon base price and accurately adjusted premiums incentivizes both parties to continue buying and selling while providing some level of profit for both.

Alternatively, a marketing arrangement called the cost-plus model changes the incentives and risks borne by each party involved in a transaction. The packing sector does not typically engage in cost-plus pricing, as it shifts the majority, if not all, of the risk onto their position. A cost-plus model dictates that the buying party, in this case the packer, pay for the original cost of the feeder cattle, the cost to feed those cattle, plus margins for the entity feeding the cattle, and then a “plus” payment or profit to the entity who sourced the original cattle. For the purposes of this case, the payment for cost-plus cattle would be the base price plus the agreed upon premiums for cattle attributes and costs plus a ‘plus’ payment, essentially a guaranteed profit margin.

$$\text{Price} = \text{Base Price } (\$/\text{cwt}) + \text{Premium or Discount Adjustment } (\$/\text{head}) + \text{Plus Payment}$$

$$\text{Cost-Plus GAP Cattle} = \$183.07/\text{cwt} + \$275/\text{head} + \$125/\text{head}$$

$$\text{Cost-Plus Certified Natural Cattle} = \$183.07/\text{cwt} + \$250/\text{head} + \$125/\text{head}$$

Again, this places 100% of the price risk and production risk on the final user of the cattle. The structure of a cost-plus model does not make financial or logistic sense for a packing entity in an arrangement with another party. Rather than compensating a secondary party the cost of sourcing feeder cattle, the cost of feeding those feeder cattle to terminal weight, and a locked in profit amount, the packer would see higher net returns by purchasing the feeder cattle directly with their own in-house buyers, paying to feed the cattle themselves, and saving money by deferring the ‘plus’ amount in the cost-plus payment. For this reason, the packing sector does not engage with cost-plus pricing in their dealings purchasing fat cattle, and it would not make sense for them to agree to that type of arrangement with another party bearing no risk through the transaction.

Tyson, as the purchasing party, would not agree to the terms of a cost-plus arrangement. I have detailed the industry-standard transaction process for buying and selling fed cattle and shown the typical procedure for Tyson. Logistically, the idea of cost-plus pricing does not financially compensate Tyson for its risk, and for the packing sector the cost-plus model is untenable in the long-term as the packer would bear the entirety of the risk in finishing cattle in a feedlot and would bear the cost of providing profits to another entity. Therefore, the cost-plus model is not the norm in the fed cattle transaction process. As such it would be unlikely that Tyson would agree to such a pricing structure knowingly.

If you have any questions please feel to contact me.



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